

REMARKS

The application has been reviewed in light of the Office Action mailed on May 31, 2006. Claims 53 has been amended for clarification, without presenting new issues or matter. Reconsideration of the application is respectfully requested for the following reasons. If the Examiner does not agree that the application is allowable in view of the following comments, the Examiner is respectfully requested to call Applicants' undersigned representative at (202) 420-2592 to schedule a personal interview at the Examiner's convenience.

Claims 53-61, 63 and 75-86 stand rejected under 35 U.S.C. 102 as being anticipated by Collins et al., U.S. Patent No. 5,888,414 ("Collins"). Reconsideration is respectfully requested for the following reasons.

Independent claim 53 recites an apparatus comprising a "bias voltage modulator for modulating a DC bias voltage between a first voltage and a second voltage, wherein at said first voltage material is deposited onto a first location while a second location is etched, and at said second voltage both first and second locations are etched." Claims 54-61 depend from claim 53.

Independent claim 75 recites an "apparatus ... comprising: ... a bias voltage modulator for modulating a DC bias voltage between a first voltage and a second voltage while processing a substrate having an opening, wherein said modulator is adapted to modulate voltage such that material is deposited at a first position of said opening which has a first aspect ratio, while a second position of said opening having a second aspect ratio, different from said first aspect ratio, is etched." Claims 76-80 depend from claim 75.

Claim 81 recites an “apparatus ... comprising: ... a bias voltage modulator for modulating a DC bias voltage between a first voltage and a second voltage while etching a self-aligned contact opening, wherein said voltage modulator is adapted to control deposition of material at a first position of said opening which has a first aspect ratio, while etching a second position of said opening which has a second aspect ratio.” Claims 82-86 depend from claim 81.

Applicants stated in the Amendment filed on March 15, 2006, that Collins fails to teach or suggest these limitations. The Office Action response, in its entirety, is as follows:

Regarding the newly added limitation of etching rate and deposition rate and deposition rate being different on different location (depends upon aspect ratio), this is an intended use (functional limitation) of the structural facilities provided by the apparatus disclosed by Collins et al. Claimed process is however known from the prior art as discussed below. Further, as discussed earlier, operating parameters claimed are intended use limitations, the apparatus is disclosed capable of supporting.

Office Action, pp. 2-3.

Applicants disagree because the above-recited limitations are not “structural facilities provided by the apparatus disclosed by Collins et al.” Moreover, although the Office Action asserts that the “[c]laimed process is however known from the prior art,” such a showing is never made by the Office Action. Collins does not teach, suggest or contemplate the above-recited limitations. The claims recite an “apparatus” having a “bias voltage modulator” that is structurally configured to perform a specific function that is neither disclosed nor suggested in the prior art. To anticipate such a structure the Office Action must provide a reference that has a structure configured to perform in the manner claimed.

In this case, the limitations disregarded by the Office Action are in the body of the claim and indeed define a specific property of the recited bias voltage modulator. This is not an intended use limitation. Instead, the bias voltage modulator, recited in claim 53 for example, must supply bias voltages which are sufficient to (1) deposit material at one location while another location is etched and (2) etch both locations. Collins has no disclosure of a bias modulator which provides these voltages.

Claims 53-61, 63 and 75-86 recite structures that are neither taught nor suggested by Collins, and the Office Action provides no support to the contrary. Thus, 53-61, 63 and 75-86 are allowable over Collins.

Claims 53-61, 63 and 75-86 stand rejected under 35 U.S.C. 102(e) as being anticipated by Hopkins et al., U.S. Patent No. 6,187,685 ("Hopkins"). This rejection is traversed.

The Office Action relies on "Col 10, lines 21-52 and Col 12, lines 54-67" of Hopkins for teaching "the application of bias voltage modulation for ARDE (Aspect Ratio Dependent Etching) and ... etching of high aspect ration [sic] by alternatively etching and depositing." Office Action, p. 3. The Office Action itself points out why Hopkins fails to teach or suggest the claimed invention by stating the Hopkins teaches "alternatively etching and depositing."

To the contrary, claim 53 recites a modulator wherein "at said first voltage material is deposited onto a first location while a second location is etched." Claim 75 recites a modulator wherein "material is deposited at a first position of said opening which has a first aspect ratio, while a second position of said opening having a second aspect ratio, different from said first aspect ratio, is etched." Claim 81 recites a modulator that "deposit[s] ... material at a first position of said opening which has a

first aspect ratio, while etching a second position of said opening which has a second aspect ratio." Moreover, Hopkins fails to teach or suggest the different aspect ratios recited in the claims, and this is not addressed in the Office Action.

Thus, Hopkins fails to teach or suggest the limitations recited by independent claims 53, 75 and 81. Claims 53, 75 and 81 and claims dependent therefrom are allowable over Hopkins.

Claim 62 stands rejected under 35 U.S.C. § 103 as being unpatentable over Collins in view of Hashimoto et al., U.S. Patent No. 5,779,925 ("Hashimoto"). Claim 62 depends from claim 53 which is allowable over Collins as discussed above. Hashimoto adds nothing to Collins to remedy its deficiencies with respect to claim 53. Thus, claim 62 is allowable together with its base claim.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Dated: August 31, 2006

Respectfully submitted,

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